

### Patent Claims

1. A heat exchanger, especially charge-air/coolant  
5 radiator (1), of disk-type construction, with two  
adjacent disks (2) defining an intermediate space  
through which a heat exchanger medium or a second  
medium to be cooled or to be heated flows,  
characterized in that the entry and/or exit region (26)  
10 of the heat exchanger medium and/or second medium is  
expanded at least on the diskcharge side or inflow side.

2. The heat exchanger as claimed in claim 1,  
characterized in that the region (26) runs  
15 rectilinearly at least over a third, in particular over  
half, of the width of the disk.

3. The heat exchanger as claimed in claim 1 or 2,  
characterized in that the region (26) runs at least  
20 over part of the width of the disk perpendicularly or  
essentially transversely to the average flow direction  
of the second medium.

4. The heat exchanger as claimed in one of the  
25 preceding claims, characterized in that the opening  
(23, 24) for the second medium in an end region of the  
disk (2) extends essentially over the entire surface of  
the same, except for edge regions (27, 28) and regions  
in which passages (5, 6) are arranged.

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5. The heat exchanger as claimed in one of the  
preceding claims, characterized in that a common heat  
exchanger medium inlet (9) and heat exchanger medium  
outlet (11) are provided for the disks (2), with at  
35 least two heat exchanger medium passages (5, 6) being  
provided per heat exchanger medium inlet and/or outlet  
(9 and 11 respectively).

6. The heat exchanger as claimed in one of the preceding claims, characterized in that the disks (2) are of axially symmetrical design with respect to their longitudinal axis with regard to the heat exchanger medium passages (5, 6).

7. The heat exchanger as claimed in one of the preceding claims, characterized in that the disks (2) are of axially symmetrical design with respect to their transverse axis with regard to the heat exchanger medium passages (5, 6).

8. The heat exchanger as claimed in one of the preceding claims, characterized in that a heat exchanger medium inlet (9) and/or a heat exchanger medium outlet (11) has a branching (7) and/or junction (10).

9. The heat exchanger as claimed in claim 8, characterized in that the branching and/or junction (7 and 10, respectively) is designed in the shape of an arc of a circle.

10. The heat exchanger as claimed in either of claims 8 and 9, characterized in that a bend of  $30^\circ$  to  $90^\circ$  is provided, as seen in the direction of flow, in the region of the branching (7) and/or of the junction (10).

11. The heat exchanger as claimed in one of claims 8 to 10, characterized in that the heat exchanger medium inlet (9), which merges into two heat exchanger medium passages (5) after the branching (7), runs parallel to the heat exchanger medium passages (5) while the two-part part of the branching (7) is arranged in a plane lying perpendicularly thereto.

12. The heat exchanger as claimed in one of claims 8 to 11, characterized in that the heat exchanger medium outlet (11), which merges from two heat exchanger medium passages (6) into the junction (10), runs  
5 parallel to the heat exchanger medium passages (6) while the two-part part of the branching (7) is arranged in a plane lying perpendicularly thereto.

13. Use of a heat exchanger as claimed in one of  
10 claims 1 to 12 as a charge-air/coolant radiator (1) or oil cooler.